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EXAMINER	
HAILEY, PATRICIA L	

ART UNIT	PAPER NUMBER
1755	

DATE MAILED: 08/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/730,221	OSWALD ET AL.	
	Examiner	Art Unit	
	Patricia L. Hailey	1755	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 June 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4 and 6-10* is/are rejected.

7)☒ Claim(s) *3 and 5* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. 09/931,161.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Specification

1. **The disclosure is objected to because of the following informalities:**

Table 1 of Applicants' Specification discloses a deacidification index (DI) of 0.95% for a pyrogenic silica according to Applicants' invention. The remainder of the Specification does not disclose a DI of "less than 3%", as recited in claim 6.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. **Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

In line 16 of claim 7, the phrase "sintering the green body **by zone**" is indefinite (emphasis added). Additionally, it cannot be determined whether lines 16 and 17 of claim 7 are intended to recite the same sintering step or to recite two separate sintering steps/conditions. Clarification is respectfully requested.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) **the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent**, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

5. Claims 1, 4, and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Clasen et al. (U. S. Patent No. 4,680,047).

Clasen et al. teach a method for the manufacture of glass bodies, in which a thixotropic suspension (comprising silica particles having a diameter ranging from 10 to 500 nm and an ionogenic additive; col. 2, lines 42-59) is used to form a green body that is subsequently purified and sintered. See col. 2, line 42 to col. 5, line 10 of Clasen et al.

The aforementioned silica particles can be pyrogenic silica having an average particle size of 40 nm. See col. 6, lines 55-60 of Clasen et al.

In a preferred embodiment, a gelled thixotropic suspension of silica particles is introduced in a dispersion liquid into a mold, and allowed to gel to form a green body. The green body is subsequently sintered to produce a glass body. See Claims 1-17 and col. 6, line 55 to col. 7, line 31 of Clasen et al.

In view of these teachings, Clasen et al. anticipate claims 1 and 4.

With respect to product-by-process claim 8, it is considered that because Clasen et al. meet the limitations of claims 1 and 4, the product produced by the teachings of Clasen et al. would be a glass body that meets the limitations of claim 8. Therefore, "[A]ny difference imparted by the product by process limitations would have been obvious to one having ordinary skill in the art at the time the invention was made because where the examiner has found a substantially similar product as in the applied prior art the burden of proof is shifted to the applicant to establish that their product is patentably distinct, not the examiner to show that the same is a process of making." In re Brown, 173 U.S.P.Q. 685 and In re Fessmann, 180 U.S.P.Q. 324.

Additionally, even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by

a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

6. Claims 1, 2, 4, and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Chandross et al. (U. S. Patent No. 5,240,488).

Chandross et al. disclose a method for fabricating an article at least in part composed of high silica glass. In the method, a sol comprising a suspension of colloidal silica particles is formed into a gel, the gel is dried and fired to produce a glass body. See claim 1 of Chandross et al.

The silica can be fumed silica, prepared by flame hydrolysis of, for example, silicon tetrachloride; this silica is considered to be "pyrogenic silica". See col. 1, lines 36-42 of Chandross et al., as well as col. 13, lines 1-17.

The fumed silica may also contain small amount of organic base material, such as tetramethylammonium hydroxide (TMAH). See col. 13, lines 46-54 of Chandross et al.

The Table of Chandross et al. disclose exemplary processing steps, including mixing silica with water and TMAH, adding a gelation agent to the admixture, pouring the admixture into a mold, and drying and sintering.

With respect to product-by-process claim 8, it is considered that because Chandross et al. meet the limitations of claims 1 and 4, the product produced by the teachings of Chandross et al. would be a glass body that meets the limitations of

claim 8. Therefore, "[A]ny difference imparted by the product by process limitations would have been obvious to one having ordinary skill in the art at the time the invention was made because where the examiner has found a substantially similar product as in the applied prior art the burden of proof is shifted to the applicant to establish that their product is patentably distinct, not the examiner to show that the same is a process of making." In re Brown, 173 U.S.P.Q. 685 and In re Fessmann, 180 U.S.P.Q. 324.

Additionally, even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

7. Claims 1, 2, 4, and 8 are rejected under 35 U.S.C. 102(e) as being anticipated by Yoon et al. (U. S. Patent No. 6,299,822).

Yoon et al. teach a method for fabricating silica glass by mixing silica, a binder, a dispersing agent, and a gelling agent, to form a sol, injecting the sol into a mold, gelating the sol injected into the mold, demolding and drying the gel, and thermally treating the dried gel. See col. 2, lines 59-67 of Yoon et al.

The silica is fumed silica (pyrogenic silica) dispersed in water. See col. 1, lines 33-40 of Yoon et al.

The thermal treatment is performed at temperatures ranging from 300-600°C to remove organic substances from the gel, followed by heating to 500-1000°C to achieve glassification. See col. 4, lines 29-40 of Yoon et al.; this disclosure is considered to read upon the term "sintering".

In an embodiment, the fumed silica is treated to produce a thermally treated silica powder, which is mixed with, inter alia, fumed silica, deionized water, TMAH, and ethyl lactate, to produce a sol. The sol is injected into a mold and gelated, aged, and dried. The dried gel is heated and sintered. See col. 4, line 41 to col. 5, line 22 of Yoon et al.

In view of these teachings, Yoon et al. anticipate claims 1, 2, and 4.

With respect to product-by-process claim 8, it is considered that because Yoon et al. meet the limitations of claims 1 and 4, the product produced by the teachings of Yoon et al. would be a glass body that meets the limitations of claim 8. Therefore, "[A]ny difference imparted by the product by process limitations would have been obvious to one having ordinary skill in the art at the time the invention was made because where the examiner has found a substantially similar product as in the applied prior art the burden of proof is shifted to the applicant to establish that their product is patentably distinct, not the examiner to show that the same is

a process of making." In re Brown, 173 U.S.P.Q. 685 and In re Fessmann, 180 U.S.P.Q. 324.

Further, even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. Claims 9 and 10 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Clasen et al. (U. S. Patent No. 4,680,047) and, separately, over Chandross et al. (U. S. Patent No. 5,240,488).

Both Clasen et al. and Chandross et al. are relied upon for their respective teachings in the above-discussed 102(b) rejections.

Because both claims 9 and 10 are product-by-process claims, it is considered that the products produced by the respective teachings of Clasen et al. and Chandross et al. would be a glass body that meets the limitations of claims 9 and 10. Therefore, "[A]ny difference imparted by the product by process limitations would have been obvious to one having ordinary skill in the art at the time the

invention was made because where the examiner has found a substantially similar product as in the applied prior art the burden of proof is shifted to the applicant to establish that their product is patentably distinct, not the examiner to show that the same is a process of making." In re Brown, 173 U.S.P.Q. 685 and In re Fessmann, 180 U.S.P.Q. 324.

Additionally, even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

12. Claims 9 and 10 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, 35 U.S.C. 103(a) as being unpatentable over Yoon et al. (U. S. Patent No. 6,299,822).

Yoon et al. is relied upon for its teachings in the above 102(e) rejection.

Because both claims 9 and 10 are product-by-process claims, it is considered that the products produced by the teachings of Yoon et al. would be a glass body that meets the limitations of claims 9 and 10. Therefore, "[A]ny difference imparted by the product by process limitations would have been obvious to one having ordinary skill in the art at the time the invention was made because where the

examiner has found a substantially similar product as in the applied prior art the burden of proof is shifted to the applicant to establish that their product is patentably distinct, not the examiner to show that the same is a process of making." In re Brown, 173 U.S.P.Q. 685 and In re Fessmann, 180 U.S.P.Q. 324.

Additionally, even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

Allowable Subject Matter

13. Claims 3 and 5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

14. Claim 7 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

The following is a statement of reasons for the indication of allowable subject matter:

While the prior art cited teaches the presence of additives such as ethyl lactate (e.g., Yoon et al. at col. 4, lines 60-62; Chandross et al. at col. 15, line 66 to col. 16, line 5), the cited references do not teach or suggest the addition of acetic acid ethyl ester (ethyl acetate), as recited in claim 3.

Costa et al. (U. S. Patent Application Publication No. 2004/0025537) disclose a sol-gel process involved in obtaining dry gels, and possibly the corresponding dense glassy bodies. Costa et al. disclose the employment of subjecting wet gels to two exchanges of liquid via substitution with first acetone and then ethyl acetate (Example 1). However, the publication date and the effective filing date of Costa et al. are after the effective filing date of the instant application.

With respect to claims 5 and 7, the prior art does not teach or reasonably suggest the physicochemical characteristics recited in these claims.

Priority

15. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. 09/931,131, filed on August 17, 2001 (now U. S. Patent No. 6,679,945).

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patricia L. Hailey whose telephone number is (571) 272-1369. The examiner can normally be reached on Mondays-Thursdays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark L. Bell can be reached on (571) 272-1362. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patricia L. Hailey/plh
Examiner, Art Unit 1755
August 23, 2004

Mark L. Bell
Supervisory Patent Examiner
Technology Center 1700